

Amendments To the Claims:

Please amend the claims as shown. Applicants reserve the right to pursue any cancelled claims at a later date.

1.-11. (cancelled)

12. (new) A method for quick access to a data network, in which data terminal devices of subscribers are each connected by a modem to an access multiplexer each by way of a digital subscriber line, the method comprising:

using the Point-to-Point Protocol over Ethernet (PPPoE) for a data transfer between the data terminal devices and an access server which is located downstream of the access multiplexer;

checking the access authorization of the data terminal devices and establishing the access to the data network by the access server;

establishing a link from the access multiplexer to the access server and to further components located downstream of the access server using an Ethernet network;

assigning an Ethernet bridge to the access multiplexer or integrating an Ethernet bridge into the access multiplexer;

evaluating an PPPoE header contained in a received Ethernet frame by the Ethernet bridge, the Ethernet bridge equipped with a filtering mechanism for evaluating;

forwarding the Ethernet frame to the Ethernet bridge if the PPPoE header can be assigned to an existing connection confirmed by the access server, or if the PPPoE header can be assigned to a connection which is being set up;

discarding all other Ethernet frames which contain a PPPoE header; and

discarding all Ethernet frames which do not contain a PPPoE header.

13. (new) The method according to Claim 12, further comprising:

starting a timer when the connection is being set up, wherein,

when the timer times out, a media access control (MAC) address of a sending Ethernet component is removed from a routing table of the Ethernet bridge if the connection set-up is not confirmed by the access server before the timer times out.

14. (new) The method according to Claim 12, wherein the Ethernet frames are discarded randomly or specifically selected for the data transfer direction toward the data terminal device in a receive buffer of an Ethernet interface through which the access multiplexer is connected to the Ethernet network, on the basis of the load status of send buffers which are assigned to the digital subscriber lines.

15. (new) The method according to Claim 13, wherein the Ethernet frames are discarded randomly or specifically selected for the data transfer direction toward the data terminal device in a receive buffer of an Ethernet interface through which the access multiplexer is connected to the Ethernet network, on the basis of the load status of send buffers which are assigned to the digital subscriber lines.

16. (new) The method according to Claim 14, wherein Ethernet frames to be assigned to the respective digital subscriber line are discarded if a send buffer overload condition on the digital subscriber line is predicted by a control logic circuit.

17. (new) The method according to Claim 15, wherein Ethernet frames to be assigned to the respective digital subscriber line are discarded if a send buffer overload condition on the digital subscriber line is predicted by a control logic circuit.

18. (new) The method according to Claim 14, wherein connection control frames which can be recognized on the basis of their Ethernet header are not discarded.

19. (new) The method according to Claim 15, wherein connection control frames which can be recognized on the basis of their Ethernet header are not discarded.

20. (new) The method according to Claim 16, wherein connection control frames which can be recognized on the basis of their Ethernet header are not discarded.

21. (new) The method according to Claim 17, wherein connection control frames which can be recognized on the basis of their Ethernet header are not discarded.

22. (new) The method according to Claim 12, wherein the data network is the Internet.

23. (new) An access multiplexer for quick access to a data network, to which data terminal devices of subscribers are each connected by a modem using a digital subscriber line, wherein for the purposes of data transfer between the data terminal devices and an access server located downstream of the access multiplexer the Point-to-Point Protocol over Ethernet PPPoE is used, wherein

the access server checks the access authorization of the data terminal devices and establishes the access to the data network, and wherein

the access multiplexer is connected to the access server and to further components located downstream by an Ethernet network, the access multiplexer comprises:

an Ethernet bridge having filtering facilities for evaluating the PPPoE headers contained in received Ethernet frames, wherein

the Ethernet frames are routed to the Ethernet bridge if the PPPoE header can be assigned to an existing connection confirmed by the access server, or if the PPPoE header can be assigned to a link connection, wherein

all other Ethernet frames which contain a PPPoE header are discarded, and wherein

all Ethernet frames which do not have a PPPoE header are discarded.

24. (new) The access multiplexer according to Claim 23, further comprising a timer which is started when the connection is set up and when the timer expires a media access control (MAC) address of the sending Ethernet component is removed from the routing tables of the Ethernet bridge provided that no confirmation of the connection set-up is given by the access server before the timer expires.

25. (new) The access multiplexer according to Claim 23, further comprising a mechanism for overload protection for the data transfer direction toward the data terminal device.

26. (new) The access multiplexer according to Claim 25, wherein the mechanism for overload protection comprises:

a mechanism for monitoring a receive buffer of an Ethernet interface through which the access multiplexer is connected to the Ethernet network;

a mechanism for monitoring the load status of send buffers which are assigned to the digital subscriber lines; and

a mechanism for the random or specific selection and discard of Ethernet frames.

27. (new) The access multiplexer according to Claim 24, further comprising a mechanism for overload protection for the data transfer direction toward the data terminal device.

28. (new) The access multiplexer according to Claim 27, wherein the mechanism for overload protection comprises:

a mechanism for monitoring a receive buffer of an Ethernet interface through which the access multiplexer is connected to the Ethernet network;

a mechanism for monitoring the load status of send buffers which are assigned to the digital subscriber lines; and

a mechanism for the random or specific selection and discard of Ethernet frames.

29. (new) The access multiplexer according to Claim 25, further comprising a control logic circuit for predicting an overload condition for the send buffer of the digital subscriber line and for influencing the receive buffer in order to discard Ethernet frames which are to be assigned to the respective digital subscriber line.

30. (new) The access multiplexer according to Claim 26, further comprising a control logic circuit for predicting an overload condition for the send buffer of the digital subscriber line and for influencing the receive buffer in order to discard Ethernet frames which are to be assigned to the respective digital subscriber line.

31. (new) The access multiplexer according to Claim 29, wherein the control logic circuit comprises a mechanism for identifying connection control frames on the basis of their Ethernet header and a mechanism for impacting the receive buffer such that connection control frames are not discarded.

Claims

1.-11. (cancelled)

12. (new) A method for quick access to a data network, in which data terminal devices of subscribers are each connected by a modem to an access multiplexer each by way of a digital subscriber line, the method comprising:

- using the Point-to-Point Protocol over Ethernet (PPPoE) for a data transfer between the data terminal devices and an access server which is located downstream of the access multiplexer;

- checking the access authorization of the data terminal devices and establishing the access to the data network by the access server;

- establishing a link from the access multiplexer to the access server and to further components located downstream of the access server using an Ethernet network;

- assigning an Ethernet bridge to the access multiplexer or integrating an Ethernet bridge into the access multiplexer;

- evaluating an PPPoE header contained in a received Ethernet frame by the Ethernet bridge, the Ethernet bridge equipped with a filtering mechanism for evaluating;

- forwarding the Ethernet frame to the Ethernet bridge if the PPPoE header can be assigned to an existing connection confirmed by the access server, or if the PPPoE header can be assigned to a connection which is being set up;

- discarding all other Ethernet frames which contain a PPPoE header; and

- discarding all Ethernet frames which do not contain a PPPoE header.

13. (new) The method according to Claim 12, further comprising:

- starting a timer when the connection is being set up, wherein, when the timer times out, a media access control (MAC) address of a sending Ethernet component is removed from a routing table of the Ethernet bridge if the connection set-up is not confirmed by the access server before the timer times out.

14. (new) The method according to Claim 12, wherein the Ethernet frames are discarded randomly or specifically selected for the data transfer direction toward the data terminal device in a receive buffer of an Ethernet interface through which the access multiplexer is connected to the Ethernet network, on the basis of the load status of send buffers which are assigned to the digital subscriber lines.

15. (new) The method according to Claim 13, wherein the Ethernet frames are discarded randomly or specifically selected for the data transfer direction toward the data terminal device in a receive buffer of an Ethernet interface through which the access multiplexer is connected to the Ethernet network, on the basis of the load status of send buffers which are assigned to the digital subscriber lines.

16. (new) The method according to Claim 14, wherein Ethernet frames to be assigned to the respective digital subscriber line are discarded if a send buffer overload condition on the digital subscriber line is predicted by a control logic circuit.

17. (new) The method according to Claim 15, wherein Ethernet frames to be assigned to the respective digital subscriber line are discarded if a send buffer overload condition on the digital subscriber line is predicted by a control logic circuit.

18. (new) The method according to Claim 14, wherein connection control frames which can be recognized on the basis of their Ethernet header are not discarded.

19. (new) The method according to Claim 15, wherein connection control frames which can be recognized on the basis of their Ethernet header are not discarded.

20. (new) The method according to Claim 16, wherein connection control frames which can be recognized on the basis of their Ethernet header are not discarded.

21. (new) The method according to Claim 17, wherein connection control frames which can be recognized on the basis of their Ethernet header are not discarded.
22. (new) The method according to Claim 12, wherein the data network is the Internet.
23. (new) An access multiplexer for quick access to a data network, to which data terminal devices of subscribers are each connected by a modem using a digital subscriber line, wherein for the purposes of data transfer between the data terminal devices and an access server located downstream of the access multiplexer the Point-to-Point Protocol over Ethernet PPPoE is used, wherein
- the access server checks the access authorization of the data terminal devices and establishes the access to the data network, and wherein
 - the access multiplexer is connected to the access server and to further components located downstream by an Ethernet network, the access multiplexer comprises:
 - an Ethernet bridge having filtering facilities for evaluating the PPPoE headers contained in received Ethernet frames, wherein
 - the Ethernet frames are routed to the Ethernet bridge if the PPPoE header can be assigned to an existing connection confirmed by the access server, or if the PPPoE header can be assigned to a link connection, wherein
 - all other Ethernet frames which contain a PPPoE header are discarded, and wherein
 - all Ethernet frames which do not have a PPPoE header are discarded.
24. (new) The access multiplexer according to Claim 23, further comprising a timer which is started when the connection is set up and when the timer expires a media access control (MAC) address of the sending Ethernet component is removed from the routing tables of the Ethernet bridge provided that no confirmation of the connection set-up is given by the access server before the timer expires.

25. (new) The access multiplexer according to Claim 23, further comprising a mechanism for overload protection for the data transfer direction toward the data terminal device.

26. (new) The access multiplexer according to Claim 25, wherein the mechanism for overload protection comprises:

- a mechanism for monitoring a receive buffer of an Ethernet interface through which the access multiplexer is connected to the Ethernet network;

- a mechanism for monitoring the load status of send buffers which are assigned to the digital subscriber lines; and

- a mechanism for the random or specific selection and discard of Ethernet frames.

27. (new) The access multiplexer according to Claim 24, further comprising a mechanism for overload protection for the data transfer direction toward the data terminal device.

28. (new) The access multiplexer according to Claim 27, wherein the mechanism for overload protection comprises:

- a mechanism for monitoring a receive buffer of an Ethernet interface through which the access multiplexer is connected to the Ethernet network;

- a mechanism for monitoring the load status of send buffers which are assigned to the digital subscriber lines; and

- a mechanism for the random or specific selection and discard of Ethernet frames.

29. (new) The access multiplexer according to Claim 25, further comprising a control logic circuit for predicting an overload condition for the send buffer of the digital subscriber line and for influencing the receive buffer in order to discard Ethernet frames which are to be assigned to the respective digital subscriber line.

30. (new) The access multiplexer according to Claim 26, further comprising a control logic circuit for predicting an overload condition for the send buffer of the digital subscriber line and for influencing the receive buffer in order to discard Ethernet frames which are to be assigned to the respective digital subscriber line.

31. (new) The access multiplexer according to Claim 29, wherein the control logic circuit comprises a mechanism for identifying connection control frames on the basis of their Ethernet header and a mechanism for impacting the receive buffer such that connection control frames are not discarded.